

REMARKS

Claims 1-38 are currently pending in the subject application and have been examined on the merits.

Claims 1-32 and 35-38 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20, 22-23 and 32-35 of US Patent No. 6,841,590.

To expedite the allowance of the claims and without acquiescing to the merits of this rejection, Applicants hereby file a terminal disclaimer over U.S. Patent No. 6,841,590. Thus, withdrawal of this rejection is respectfully requested.

The presently claimed invention is directed to a coating composition which has a melting point of at least 75⁰ C or greater, is solid at room temperature and when heated to between 90⁰C and 135⁰ C is a coating composition with a coating viscosity of between 100 cps and about 1200 cps. Applicants' solvent-free coating composition comprises a solid, linear alcohol at room temperature, a thermoplastic binder and a wax (*e.g.*, specification page 3, lines 8-22, page 5, lines 58, etc).

The Claims Are Not Anticipated by Brown

Claims 1-2, 6, 17, 20, 25-26 and 31-32 were rejected under 35 U.S.C. §102(b) as being anticipated by Brown et al. (US Patent No. 5,185,035, hereinafter "Brown"). Applicants respectfully traverse this rejection.

Brown teaches a transparent hot melt jet ink composition which comprises hot melt ink in a vehicle containing a normally non-transparent material and including at least one compatible transparentizing material selected from the group consisting of polyol fatty acid esters, polyethylene waxes etc (*e.g.*, col. 2, lines 1-9).

In order to be anticipatory, a reference must describe “each and every element” with the condition that the identical invention must be shown in as complete detail as is contained in the claim. MPEP § 2131. Brown clearly fails to meet the conditions of an anticipatory reference in that it fails to disclose a solid linear alcohol at room temperature. In addition, Brown discloses a melt viscosity in the range from 5 cps to 100 cps (e.g., col. 2, lines 15-22) as its composition is used as hot melt ink for use in ink jet systems which are not functional with higher viscosities.

In contrast, Applicants’ coating composition has a coating viscosity between about 100-1200 cps.

As such, Brown does not anticipate claims 1-2, 6, 17, 20, 25-26 and 31-32, and withdrawal of their rejection under 35 U.S.C. § 102(b) over Brown is respectfully requested.

The Claims Are Not Anticipated By Suematsu

Claims 1-2, 6-9, 12, 17, 20 and 31-32 were rejected under 35 U.S.C. § 102(b) as being anticipated by Suematsu et al. (US Patent No. 5,597,641, hereinafter “Suematsu”). Applicants respectfully traverse this rejection.

As set forth above, Applicants’ invention is directed to a solvent free coating composition characterized, *inter alia*, by a coating viscosity of between about 100 cps and about 1200 cps when heated to a temperature between about 90⁰ C and about 135⁰ C. On the contrary, Suematsu discloses, *inter alia*, a series of ink layers having a melt viscosity of 20 to 200 cps/90⁰ C (e.g., col. 3, lines 27-31). Further, Suematsu composition does not comprise a solid linear alcohol at room temperature. Thus, as Brown above, Suematsu also fails to meet the conditions of an anticipatory reference in that it fails to disclose a solvent free composition comprising a solid linear alcohol at room temperature and characterized by a high viscosity when heated a temperature between about 90⁰ C and about 135⁰C.

In other words, Suematsu also fails to disclose “each and every element” of the rejected claims. As such, Applicants respectfully request withdrawal of the rejection of claims 1-2, 6-9, 12, 17, 20 and 31-32 under 35 U.S.C. § 102(b).

The Claims Are Not Rendered Obvious By Brown or Suematsu In View Of Ouchi

Claims 3-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brown or Suematsu either of which in view of Ouchi et al. (US Patent No. 6,106,602, hereinafter “Ouchi”). Applicants respectfully traverse this rejection.

As previously stated, neither Brown nor Suematsu discloses, teaches or even suggests all the features of Applicants’ solvent free coating composition of claim 1, and this insufficiency continues for dependent claims 3-5.

In other words, neither Brown nor Suematsu discloses, teaches or even suggests a composition with a viscosity range as claimed in claim 1 and Ouchi does not make up for their deficiencies. That is, Ouchi discloses that the melt viscosity of the ink composition at temperatures from 100⁰ to 150⁰ C is desirably in the range from 5 to 50 mPa.s (corresponding to 5 to 50 cps) and that if the ink composition exceeds 50 mPa.s, ink jet recording can hardly be conducted (*e.g.*, col. 4, lines 7-15).

That is, the combination of Brown or Suematsu with Ouchi does not teach and suggest the solvent free coating composition as claimed, which is characterized by a viscosity of about 100 cps and about 1200 cps when heated to temperature between about 90⁰ C and about 135⁰ C.

Accordingly, the combination of either Brown or Suematsu with Ouchi does not render obvious claims 3-5 and withdrawal of their rejection under 35 U.S.C. § 103(a) is respectfully requested.

Claim 10 Is Not Rendered Obvious By Suematsu In View Of Elwakil and Herten

Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Suematsu in view of Elwakil (US Patent No. 5,574,078, hereinafter “Elwakil”) and Herten et al. (US Patent No. 4,853,427, hereinafter “Herten”). Applicants respectfully traverse this rejection.

As previously stated, Suematsu does not disclose, teach or even suggest all the features of Applicants’ solvent free coating composition and this insufficiency continues for dependent claim 10.

Thus, Suematsu does not render obvious Applicants’ claimed invention and neither Elwakil nor Herten can cure Suematsu’s deficiency. Elwakil teaches and discloses an ink jet ink composition with a viscosity of about 5 to about 30 centipoises at 125^o C to perform acceptably in hot melt ink jet printers (*e.g.*, col. 9, lines 18-29).

Herten is silent in regard to an ink viscosity as it does not disclose an ink but rather a polymer composition used in molding, stamping, calendaring extrusion, mixing and roll processing process (*e.g.*, col. 4, lines 23-31).

As such, the combination of Suematsu with Elwakil and Herten does not render obvious claim 10 to one of ordinary skill in the art, due to the failure of the combination to teach or even suggest a solvent free coating composition with a coating viscosity of between about 100 and about 1200 cps.

Accordingly, Applicants respectfully request withdrawal of the rejection of claim 10 as being obvious under 35 U.S.C. § 103(a) over the combination of Suematsu in view of Elwakil and Herten.

The Claims Are Not Rendered Obvious By Suematsu In View of Kruse

Claims 13-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Suematsu in view of Kruse (US Patent No. 5,112,398, hereinafter “Kruse”). Applicants respectfully traverse this rejection.

As previously stated, Suematsu does not disclose, teach or even suggest all the features of Applicants’ solvent free coating composition of claim 1 and this insufficiency continues for dependent claim 13-14.

Kruse teaches and discloses an ink composition which is fluid at room temperature and which comprises a solvent (*e.g.*, col. 3, lines 10-22). Further, Kruse teaches that the ink “behaves like a solvent ink rather than hot melt ink at operating temperature of 55^o C exhibiting a viscosity of 15-30 cps, possibly well below 30 cps” (*e.g.*, col. 5, lines 54-60). Clearly, Kruse teaches away from Applicants’ solvent free coating composition which is solid at room temperature and has a melt viscosity of between 100-1200 cps. In other words, the combination of Suematsu with Kruse still does not teach and suggest Applicants’ aforementioned claim limitation.

Accordingly, as the cited prior art, alone or in combination, does not disclose, teach or even suggest Applicants’ claimed invention to one of ordinary skill in the art, Applicants respectfully request withdrawal of the rejection of claims 13-14 under 35 U.S.C. § 103(a).

The Claims Are Not Rendered Obvious By Brown or Suematsu In View of Oliver

Claims 18-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown or Suematsu either of which in view of Oliver et al. (US Patent No. 5,593,486, hereinafter “Oliver”). Applicants respectfully traverse this rejection. As previously stated, Brown and Suematsu do not disclose, teach or even suggest all the features of Applicants’ solvent free

coating composition as claimed in claim 1, and this insufficiency continues for dependent claims 18-19.

Brown and Suematsu fail to teach or disclose the ink viscosity range of Applicants' solvent free coating composition and Oliver does not overcome this deficiency.

Oliver teaches an ink jet with a viscosity from about 1 to about 20 cps at temperatures greater than 45⁰C (e.g., col. 8, lines 2-10). Thus, the combination of either Brown or Suematsu in view of Oliver does not teach and suggest the solvent free coating composition as claimed, which is characterized by a viscosity of about 100 cps and about 1200 cps when heated to temperature between about 90⁰ C and about 135⁰ C.

As such, Applicants respectfully request withdrawal of the rejection of claim 18-19 under 35 U.S.C. §103(a) over Brown and Suematsu in view of Oliver.

The Claims Are Not Rendered Obvious By Brown or Suematsu In View of Oliver

And Ethylene Homopolymers- Polywax

Claims 21-22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brown or Suematsu either of which in view of Oliver and *Ethylene Homopolymers- Polywax*. Applicants respectfully traverse this rejection.

As previously stated Brown and Suematsu do not disclose, teach or even suggest all the features of Applicants' solvent free coating composition of claim 1 and this insufficiency continues for dependent claims 21-22. Brown and Suematsu fail to teach or suggest compositions with viscosity in the range disclosed by Applicants' solvent free coating composition. Neither Oliver nor the *Ethylene Homopolymers- Polywax* document cures this deficiency.

Oliver teaches and discloses an ink jet composition with low ink viscosity. As set forth above, the viscosity disclosed by Oliver is from about 1 to about 20 cps at temperatures greater than 45⁰ C. Nowhere in *Ethylene Homopolymers- Polywax* is the formulation of a solvent free coating composition or there is any disclosure of a viscosity range.

That is, the combination of Brown and Suematsu either of which in view of Oliver and the *Ethylene Homopolymers- Polywax* document does not teach or suggest the solvent free coating composition as claimed, which is characterized by a viscosity of about 100 cps and about 1200 cps when heated to temperature between about 90⁰ C and about 135⁰ C.

As such, the combination of Brown or Suematsu either of which in view of Oliver and *Ethylene Homopolymers- Polywax* does not render obvious Applicants' claimed invention and withdrawal of the rejection of claims 21-22 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 24 Is Not Rendered Obvious By Suematsu In View of Sawada

Claim 24 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Suematsu in view of Sawada (US Patent No. 5,560,765, hereinafter "Sawada"). Applicants respectfully traverse this rejection.

As previously stated, Suematsu does not disclose, teach or even suggest all the features of Applicants' solvent free coating composition as claimed in claim 1, and this insufficiency continues for dependent claim 24. Suematsu fails to teach or suggest the viscosity range of Applicants' claimed composition and Sawada does not cure this deficiency.

Sawada teaches and discloses ink jet compositions which comprise a wax, a resin, a dye and at least one amide. Sawada teaches ink compositions with low viscosity, in that the compositions are used in ink jet printing apparatuses. Further, Sawada does not disclose, teach or even suggest all the features of Applicants' solvent free coating composition which comprises

a solid linear alcohol at room temperature, a thermoplastic binder and a wax. Accordingly the combination of Suematsu with Sawada does not teach or suggest the solvent free coating composition as claimed and Applicants respectfully request withdrawal of the rejection of claim 24 under 35 U.S.C. § 103(a).

The Claims Are Not Rendered Obvious by Brown or Suematsu in View of Jaeger

Claims 27-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown or Suematsu either of which in view of Jaeger et al. (US Patent No. 4,889,560, hereinafter "Jaeger"). Applicants respectfully traverse this rejection.

As previously stated, Brown does not disclose, teach or even suggest all the features of Applicants' solvent free coating composition as claimed in claim 1 and this deficiency continues for dependent claims 27-30. Further, Brown fails to teach or suggest a viscosity range as claimed by Applicants and Jaeger does not overcome this deficiency.

Jaeger teaches and discloses an ink jet composition with a viscosity from about 5 to about 30 cps and more preferably from about 9 to 12 cps at 150⁰ C (e.g., col. 6, lines 12-23).

Thus, the combination of Brown with Jaeger is not Applicants' solvent free coating composition having a viscosity between 100 cps and about 1200 cps when heated to a temperature between about 90⁰ C and about 135⁰ C.

As such, the combination of Brown with Jaeger does not render obvious claims 27-30 and withdrawal of their rejection under 35 U.S.C. § 103(a) is respectfully requested.

The Claims Are Not Rendered Obvious By Sawada

Claims 1-2, 6-8, 12, 15-17, 20, 23-26, 31-32 and 33-34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sawada. Applicants respectfully traverse this rejection.

As set forth above, Sawada teaches and discloses an ink jet composition which comprises a wax, a resin, a dye and at least one amide. Further, Sawada's ink composition find application in ink jet printing apparatuses and, as it is known in the art, must necessarily be characterized by low viscosity.

One of the requisites to establish a *prima facie* case of obviousness is that the prior art reference (or references combined) must teach or suggest all of the claimed limitations. MPEP § 706.02(j).

Sawada does not teach or suggest Applicants' claimed solvent free coating composition which comprises a solid linear alcohol at room temperature, a thermoplastic binder and a wax, wherein the coating composition has a coating viscosity between about 100 cps and 1200 cps when heated to a temperature between about 90⁰ C and about 135⁰ C. Further, Sawada does not disclose, teach or even suggest a method of preparing Applicants' hot melt coating composition.

On the contrary, Sawada teaches and discloses a composition to be used as an ink jet composition, which, as it is known in the art, must have a low viscosity to perform acceptably in hot melt ink jet printers. Accordingly, for the reasons set forth above, Sawada does not render unpatentable claims 1-2, 6-8, 12, 15-17, 20, 23-26, 31-32 and 33-34 and withdrawal of their rejection under 35 U.S.C. § 103(a) is respectfully requested.

The Claims Are Not Rendered Obvious By Sawada In View of Ouchi

Claims 3-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sawada as applied to claims 1-2, 6-8, 12, 15-17, 20, 23-26, 31-32 and 33-34 above, and further in view of Ouchi. Applicants respectfully traverse this rejection.

As set forth above, Sawada does not disclose, teach or even suggest all the features of Applicants' solvent free coating composition of claim 1 and its deficiency continues for

dependent claims 3-5. As also set forth above, Ouchi teaches and discloses an ink jet composition with a viscosity which is desirably from 5 to 50 mPa.s, and preferably from 5 to 30 mPa.s. at temperatures from 100⁰ to 150⁰ C. Further, Ouchi teaches and discloses that with viscosity exceeding 50 mPa.s, ink jet recording can hardly be conducted (e.g., col. 4, lines 7-15).

Thus, Sawada does not teach or suggest all of Applicants' claimed limitation and Ouchi does not make up for its deficiency. In other words, the combination of Sawada with Ouchi is not the solvent free coating composition as claimed.

Thus, for the reason set forth above, the combination of Sawada with Ouchi does not render unpatentable claims 3-5 and the withdrawal of their rejection under 35 U.S.C. § 103(a) is respectfully requested.

The Claims Are Not Rendered Obvious by Sawada In View of Kruse

Claims 13-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sawada as applied to claims 1-2, 6-8, 12, 15-17, 20, 23-26, 31-32 and 33-34 above, and further in view of Kruse. Applicants respectfully traverse this rejection.

As set forth above, Sawada does not disclose, teach or even suggest all the features of Applicants' solvent free coating composition of claim 1, and its deficiency continues for dependent claims 13-14. As also set forth above, Kruse's composition is fluid at room temperature and has a viscosity of 15-30 cps at operating temperature of 55⁰ C. Thus, Sawada does not teach or suggest Applicants' solvent free coating composition characterized by a viscosity of about 100 cps and about 1200 cps when heated to temperature between about 90⁰ C and about 135⁰ C, and Kruse fails to make up for its deficiency.

That is, the combination of Sawada with Kruse still does not teach or suggest Applicants' claimed limitations. Therefore, for the reason set forth above, Applicants respectfully submit

that claims 13-14 are patentable over the cited prior art and request that the rejection of claims 13-14 under 35 U.S.C. § 103(a) be withdrawn.

The Claims Are Not Rendered Obvious By Sawada In View of Oliver

Claims 18-19 were rejected under §103(a) as being unpatentable over Sawada as applied to claims 1-2, 6-8, 12, 15-17, 20, 23-26, 31-32 and 33-34 above, and further in view of Oliver. Applicants respectfully traverse this rejection.

As set forth above, Sawada does not disclose, teach or even suggest all the features of Applicants' solvent free coating composition of claim 1, and its deficiency continues for dependent claims 18-19. As also set forth above, Oliver teaches an ink jet composition with a viscosity from about 1 to about 20 cps at temperatures greater than 45°C. That is, Sawada does not teach the claimed solvent free coating composition which is characterized by a viscosity of about 100 to 1200 cps when heated at 90°C to 135°C, and Oliver fails to make up for its deficiency. That is, the combination of Sawada with Oliver still does not teach, disclose or even suggest the aforementioned claim limitation.

Thus, for the reason set forth above, Applicants respectfully submit that claims 18-19 are patentable over the combination of the cited prior art and request that such rejection under 35 U.S.C. § 103(a) be withdrawn.

The Claims Are Not Rendered Obvious By Sawada In View Of Oliver And Ethylene

Homopolymers- Polywax

Claims 21-22 were rejected under §103(a) as being unpatentable over Sawada as applied to claims 1-2, 6-8, 12, 15-17, 20, 23-26, 31-32 and 33-34 above, and further in view of Oliver and *Ethylene Homopolymers- Polywax*. Applicants respectfully traverse this rejection.

As set forth above, Sawada does not disclose, teach or even suggest all the features of Applicants' solvent free coating composition of claim 1, and its deficiency continues for dependent claims 21-22.

As also set forth above, Oliver teaches an ink jet composition with a viscosity from about 1 to about 20 cps at temperatures greater than 45⁰C and the *Ethylene Homopolymers- Polywax* document does not teach, disclose or even suggest any formulation of solvent free coating compositions or any range of viscosity.

In other words, the combination of Sawada with Oliver does not teach a solvent free coating composition characterized by a viscosity of about 100 to 1200 cps at 90⁰ C to 135⁰ C, comprising a liner alcohol which is solid at room temperature, a thermoplastic binder and a wax, and the *Ethylene Homopolymers- Polywax* document does not make up for this deficiency. That is the combination of Sawada, Oliver and of the *Ethylene Homopolymers- Polywax* document still does not teach and suggest the aforementioned claim limitation.

Thus, for the reason set forth above, Applicants respectfully submit that claims 21-22 are patentable over the combination of the cited prior art and request that such rejection under 35 U.S.C. § 103(a) be withdrawn.

The Claims Are Not Rendered Obvious By Sawada In View of Jaeger

Claims 27-30 were rejected under §103(a) as being unpatentable over Sawada as applied to claims 1-2, 6-8, 12, 15-17, 20, 23-26, 31-32 and 33-34 above, and further in view of Jaeger. Applicants respectfully traverse this rejection.

As set forth above, Sawada does not disclose, teach or even suggest all the features of Applicants' solvent free coating composition of claim 1, and its deficiency continues for dependent claims 27-30.

As also set forth above, Jaeger discloses an ink jet composition with a viscosity from about 5 to 30 cps at 150⁰ C. Thus, Sawada does not teach the presently claimed solvent free coating composition and Jaeger does not make up for its deficiency. In other words, the combination of Sawada with Jaeger is not a solvent free coating composition with a viscosity of about 100 to 1200 cps at 90⁰ C to 135⁰ C, comprising a liner alcohol which is solid at room temperature, a thermoplastic binder and a wax.

Thus, for the reason set forth above, the combination of Sawada with Jaeger does not render unpatentable claims 27-30 and the withdrawal of their rejection under 35 U.S.C. § 103(a) is respectfully requested.

Conclusion

Applicants submit that the claims are now in condition for allowance and a Notice to that effect is respectfully requested.

If this *Amendment and Response* does not otherwise result in the issue of such Notice, the Examiner is respectfully invited to contact the Applicants' undersigned counsel for an interview.

No extra fee is believed to be due for the filing of this *Amendment and Response*. However, the Director is hereby authorized to charge all fees due, and credit any overpayments, to Deposit Account No. 50-0540.

Respectfully submitted,

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